

NAZAROV, A.V.; VASIL'YEVA, V.I.

Some properties of "winter" cement. Izv.vys.nch.zav.; stroi.
i arkhit. 5 no.4:105-108 '62. (MIRA 15:9)

1. Voronezhskiy inzhenerno-stroitel'nyy institut.
(Cement)

VASIL'YEVA, V.I.

Middle Paleozoic crystalline schists and gneisses in the
Irtysh shear zone. Trudy VSEGU 92-142-155 '63. (MIRA 17.5)

RUSINOV, Mikhail Mikhaylovich; YAKHONTOV, Ye.G., red.; VASIL'YEVA,
V.I., red.izd-va; ROMANOVA, V.V., tekhn. red.

[Dimension calculations of optical systems] Gabaritnye
raschety opticheskikh sistem. 2., perer. izd. Moskva,
Gosgeoltekhizdat, 1963. 399 p. (MIRA 17:3)

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106
58 BH

Dortman, Nina Borisovna; Vasil'yeva, Valentina Ivanovna; Veynberg, A. K.; Dubin-
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Khoreva, B. Ya.; Sholpo, L. Ye.
44,55 44,55 44,55 44,55

Physical properties of rocks and mineral resources of the USSR (Fizicheskiye svoj-
stva gornykh porod i poleznykh iskopayemykh SSSR) Moscow, Izd-vo "Nedra", 1964.
325 p. illus., bibliog. (At head of title: Gosudarstvennyy geologicheskiy in-
titut SSSR. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut). 44,55
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TOPIC TAGS: magmatic rock, metamorphic rock, mineralogy, petrology, seismology
12,44,55

PURPOSE AND COVERAGE: This book is the result of the generalization of materials
collected primarily by geophysical trusts and geologic agencies, as well as by the
institute named (VSEGEI). Principal attention is paid to the basic laws governing
variations in the physical properties of rocks, various petrographic groups, and
useful minerals of diverse mineralogic composition. The physical parameters to

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which special attention is given include the density, the magnetic susceptibility, the specific electrical resistance, and the rate of propagation of longitudinal and transverse waves. The compilers of the book are colleagues of the Laboratoriya fizicheskikh svoystv gornykh porod and the Otdel petrografii of VSEGEI. They express their gratitude to B. A. Andreyev, A. A. Logachev, G. I. Martynova, S. V. Moskvaleva, A. S. Semenov, T. N. Simonenko, K. G. Bogdanova, Ye. A. Butakova, V. F. Dybkov, B. K. L'vov, V. I. Moskvaleva, I. A. Petrova, Yu. Ye. Rytik, Ye. K. Stankovich, A. T. Solov'yev, and A. D. Shcheglov.

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Card 3/3

S/196/62/000/020/008/021
E194/E155

AUTHORS: Marshak, I.S., Vasil'yeva, V.I., and Vasserman, A.L.
TITLE: 'Sirius': the most powerful tubular xenon lamp in
the world

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika,
no. 20, 1962, 6, abstract 20 V 31. (Svetotekhnika,
no. 3, 1962, 7-13).

TEXT: The construction and characteristics of a 100 kW xenon
lamp developed in the Moskovskiy elektr.-lampovyy zavod (Moscow
Electric Lamp Works) are fully described. When operating with
water-cooling, the luminous output of the lamp corresponds to a
power per unit length of 1100 W/cm, reaching 50 lumens per watt.
The lamp operates without ballast and uses a starting device
similar to that previously developed for xenon lamps types
ДКСТ-20000 (DKST-20000). The lamps were tested in a special
experimental rig set up in the engineering pavilion of the
Exhibition of Achievements of the National Economy. This equipment
consisted of three lamps of output up to 100 kW connected in the

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'Sirius': the most powerful ...

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phases of a three-phase a.c. 380/220 V supply. The lamps were physically positioned in a star-pattern with mirror reflectors joined together in a unit mobile construction installed in the dome of the pavilion. The lighting is remote-controlled from a panel in a room of the pavilion. Cooling water for the lamps was pumped to the lighting fitting; to avoid overheating a water-pressure relay disconnected the lamps if the water pressure fell below 0.4 atm. The experimental equipment confirmed the possibility of using high-power ballastless xenon lamps with water cooling for illumination.

6 illustrations. 6 references.

[Abstractor's note: Complete translation.]

Card 2/2

38579
3/301/62/000/010/044/085
3168/3180

15.9204

AUTHORS: Gur'yanova, Ye. N., Vasil'yeva, V. I.

TITLE: The structure of polysulfides and the strength of S-S bonds

PERIODICAL: Referativnyj zhurnal. Khimiya, no. 10, 1962, 168-169,
abstract 10Zh6 (Sb. "Khimiya seraorganicheskoyedineniy,
soderzhashchikhsya v neftyakh i nefteproduktakh. v. 4".
M., Gostoptekhnizdat, 1961, 24-35)

TEXT: The dipole moment and isotope dilution methods were used to study
the structure of disulfides and polysulfides and the strength of the
S-S bonds in these compounds. It was found that, irrespective of the
composition and structure of R, all disulfides of the RSSR type, in which
R is an alkyl (from CH_3 to $\text{C}_{18}\text{H}_{37}$), an aryl or an aralkyl, have
practically identical dipole moments μ (in C_6H_6 at 15.25 and 40°C)
of ~ 2.0 D. Under these conditions therefore there is no free rotation
of RS groups round the S-S bond and that all the disulfides, both in
the crystalline and liquid states as well as in solution, have a config-
uration in which the C-S bonds are arranged in different planes. This config-
uration X
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S/081/62/000/010/044/085
R168/3180

The structure of polysulfides and ...

uration is due to mutual repulsion of the unshared $3p_z^2$ electron pairs of neighboring sulfur atoms. Stability of the spatial configuration independently of the structure of R, was also found in all the trisulfides ($\mu \approx 1.65$ D) and tetrasulfides ($\mu \approx 2.1-2.2$ D) investigated. Investigation of the reaction in which RS groups were exchanged between disulfides marked with S³⁵ and mercaptans or thiophenols (Cf. RZhKhim, no. 4, 1955, 5308; no. 7, 1956, 18790), carried out in dry non-polar solvents (C₆H₆, xylene, decalin), it was found that it was greatly accelerated by UV light; the presence of radicals in the solutions of certain disulfides was proved by means of a solution of diphenylpicrylhydrazyl. The E (act.) was measured of exchange reactions of certain marked disulfides with various mercaptans, and was found to be independent of the nature of the mercaptan, being entirely determined by the properties of the disulfide. The exchange reactions investigated thus take place by the mechanism of unbranched chain reactions, the limiting factor being the dissociation of disulfides into the RS radicals, i.e. breaking of the S-S bond. On this basis, and also on the assumption

X

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B160/B180

The structure of polysulfides and ...

that there is little difference between the E (act.) of the reaction which continues the chain that of the recombination of the radical, the energy values of the S-S bonds in the disulfides were determined as double the E (act.) of the exchange reactions. The disulfide, the mercaptan (or thiophenol) the temperature in $^{\circ}\text{C}$ and the energy of the

S-S bond in kcal are now given: $(\text{C}_4\text{H}_9)_2\text{S}_2^{35}$, $\text{C}_4\text{H}_9\text{SH}$, 169-231, 58; $(\text{C}_8\text{H}_{17})_2\text{S}_2^{35}$, $\text{C}_8\text{H}_{17}\text{SH}$, 176-240, 60; $(\text{C}_{14}\text{H}_{29})_2\text{S}_2^{35}$, $\text{C}_{14}\text{H}_{29}\text{SH}$, 160-199, 58; $(\text{C}_{18}\text{H}_{37})_2\text{S}_2^{35}$, $\text{C}_{18}\text{H}_{37}\text{SH}$, 180-204, 60; $(\text{C}_6\text{H}_5\text{CH}_2)_2\text{S}_2^{35}$, $\text{C}_6\text{H}_5\text{CH}_2\text{SH}$, 180-227, 62; $(\text{C}_6\text{H}_5)_2\text{S}_2^{35}$, $\text{C}_6\text{H}_5\text{SH}$, 35-80, 20; $(n\text{-CH}_3\text{C}_6\text{H}_4)_2\text{S}_2^{35}$, $n\text{-CH}_3\text{C}_6\text{H}_4\text{SH}$, 95-142, 26; $(n\text{-CH}_3\text{OC}_6\text{H}_4)_2\text{S}_2^{35}$, $n\text{-CH}_3\text{OC}_6\text{H}_4\text{SH}$, 101-164, 29; $(n\text{-C}_6\text{H}_5\text{C}_6\text{H}_4)_2\text{S}_2^{35}$, $n\text{-C}_6\text{H}_5\text{C}_6\text{H}_4\text{SH}$, 110-160, 29; $(n\text{-NO}_2\text{C}_6\text{H}_4)_2\text{S}_2^{35}$, $n\text{-NO}_2\text{C}_6\text{H}_4\text{SH}$, 104-145, 46. The data obtained show that in all the

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B168/B180

The structure of polysulfides and ...

aliphatic and aliphatic-aromatic disulfides the strength of the S-S bonds is practically the same, whereas in the aromatic disulfides the energy values of the S-S bonds are much lower; introduction of substitutes into the para position of the phenyl rings strengthens the S-S bond of aromatic disulfides. The difference in the strength of the S-S bonds of aliphatic and aromatic disulfides is due to the different energy value of stabilization of the RS radicals which form; the greater stability of radicals with an aromatic R is due to interaction between the unpaired p-electron of the sulfur atom and the system of π -electrons of the aromatic ring. A similar regularity was found in the influence of R on the strength of the S-S bonds and also in the polysulfides in the case of the reaction of isotope exchange between them and elemental sulfur (cf. RZhKhim, no. 4, 1955, 5309). The polysulfide, the temperature in $^{\circ}\text{C}$ and the E (act.) in kcal are given as: $(\text{C}_2\text{H}_5\text{S})_2\text{S}^{35}$, 130-170, 27.0; $(\text{C}_2\text{H}_5\text{S})_2\text{S}_2^{35}$, 110-160, 24; $(n\text{-CH}_3\text{C}_6\text{H}_4\text{S})_2\text{S}^{35}$, 80-130, 14.5; $(n\text{-CH}_3\text{C}_6\text{H}_4\text{S})_2\text{S}_2^{35}$, 80-130, 11.5; $(\text{C}_4\text{H}_9\text{S})_2\text{S}_3^{35}$, 115, $k = 0.6 \cdot 10^{-4}$; \checkmark

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R160/S180

The structure of polysulfides and ...

$(C_6H_5CH_2S)_2S^{35}$, 110, no exchange (150, exchange); $(n-CH_3C_6H_4SO_2)_2S$,
140, no exchange. The authors consider that RS group exchange reactions
are very important because they can take place in more complex systems:
albumens, vulcanized rubbers, sulfur-base petroleums and petroleum products.
[Abstracter's note: Complete translation.]

Card 5/5

VASIL'YEVA, V.K.; TERESHCHUK, T.I.

Maximum and minimum of the cutaneogalvanic reaction. Uch.zap.Len.
un.no.138:228-233 '52. (MIRA 9:6)
(ELECTROPHYSIOLOGY) (SKIN)

VASIL'YEVA, V.K.; GOL'SHTEYN, M.M.

Functional shifts of the nervous system in pulmonary tuberculosis
in artificial pneumothorax. Probl.tuberk., Moskva no.1:11-17 Jan-
Feb 1953. (CLML 24:2)

1. Docent for Vasil'yeva; Professor for Gol'dshteyn. 2. Of Leningrad
Scientific-Research Tuberculosis Institute imeni Prof. A. Ya. Shternberg
(Director -- Candidate Medical Sciences A. D. Semenov).

VASIL'YEV, V.K.; GAZHALA, Ye.M.

Mechanism of the change of skin potentials. Uch. zap. IGU no.222:
125-142 '57. (MLRA 10:2)

1. Kafedra fiziologii cheloveka i zhivotnykh Leningradskogo Gosudarstvennogo universiteta.
(ELECTROPHYSIOLOGY)

V. S. TUL'YAK, V. K.

Effect of atropine on skin polarizing potentials. Rely. sist.
(Leningrad) 2 no. 3:62-68 (1977)

1. Kafedra fiziologii cheloveka i zhivotnykh Fiziologicheskogo
instituta im. I. M. Sechenova Leningradskogo gosudarstvennogo
universiteta.

VASTIYeva, V.K.

Regularities of changes in polarization processes in the skin
and the mechanism of these changes. Nerv. sist. no.4:58-60
'63 (MIRA 18:1)

1. Fiziologicheskiy institut Leningradskogo universiteta.

VASIL'YEVA, V.K.

Intercentral relations in bronchial asthma complicated by another
pathological process. Vest.LGU 17 no.21:140-143 '62. (MIRA 15:12)
(ASTHMA)

VASIL'YEVA, V.K.

Bioelectric phenomena in experiments with isolated frog skin. Vest.
LGU 15 no.21:124-136 '60. (MIRA 14:4)
(Electrophysiology) (Skin)

VASIL'YEVA, V.K.; GOL'DSHTEYN, M.M.; GUSEVA, Ye.A.

Changes in the latent period of cortical motor reaction in patients with pulmonary tuberculosis produced by therapeutic doses of phthivazid and streptomycin. Uch. zap. LGU no.239:8-17 '58. (MIRA 12:1)

1. Kafedra fiziology cheloveka i zhivotnykh Leningradskogo gosudarstvennogo universiteta i Leningradskiy tuberkuleznyy institut.
(STREPTOMYCIN) (ISONICOTINIC ACID) (CEREBRAL CORTEX)

BEREZINA, M.P.; VASIL'YEVA, V.K.

Conditioned reflex variation of skin reactions in patients with
bronchial asthma [with summary in English]. Vest.LGU 13 no.21:
125-133 '58. (MIRA 11:12)
(ASTHMA) (SKIN) (CONDITIONED RESPONSE)

USSR / Human and Animal Physiology (Normal and Pathology). Nervous System. General Problems T

Abs Jour: Ref Zhur-Biologiya, No 21, 1958, 97838

Author : Vasil'yeva, V. K., Gazhala, Ye. M.

Inst : Leningrad State University

Title : On the Mechanism of Change of Skin Potentials

Orig Pub: Uch. zap. LGU, 1957, No 222, 125-142

Abstract: In man, cat, rabbit, and frog the value of skin-polarizing potentials (SP), generated by polarization of skin with direct current, depends on the metabolism of the given organism and also on the functional state of the nervous system and obeys Ohms law. SP is higher in warmblooded animals than incoldblooded; in children they are higher

Card 1/2

VASIL'YEVA, V.L.
SMIRNOVA, M.F., VASIL'YEVA, V.L., SHEVCHENKO, L.F., SEREDA, V.N., SHAYKHET, G.Kh.

Study of the efficacy of vaccination against influenza. Vop.virus
3 no.2:107-108 Mr-Ap '58 (MIRA 11:5)

1. Kiyevskiy institut epidemiologii i mikrobiologii,
(INFLUENZA, immunology
vacc., evaluation (Rus))

DATSKO, V.G.; VASIL'YEVA, V.L.

Changes observed in the discharge of organic substances and biogenous elements by waters of the Don River into the Sea of Azov following the construction of Tsimlyansk Reservoir. Gidrokhim. mat. 34:77-85 '61. (MIRA 15:2)

1. Gidrokhimicheskiy institut AN SSSR, Novocherkassk.
(Don River--Water--Composition)

ZENIN, A.A.; VASIL'YEVA, V.L.

Variations in the concentration of biogenous and organic substances
and gas composition of waters of the Volga River before its regulation
(1954-1955). Gidrokhim. mat. 32:31-46 '61. (MIRA 14:6)

1. Gidrokhimicheskiy institut AN SSSR, Novocherkassk.
(Volga River-Water-Composition)

DATSKO, V.G.; VASIL'YEVA, V.L.

Initial production of plankton in the Tsimlyansk Reservoir.
Gidrokhim. mat. 35:82-89 '63. (MIRA 16:7,

1. Gidrokhimicheskiy institut, Novocherkassk.
(Tsimlyansk Reservoir--Plankton)

DATSKO, V.G. [deceased]; VASIL'YEVA, V.L.; TUMAKOVA, Zh.A.

Content of organic carbon in the silts of the Tsimlyansk
Reservoir. Gidrokhim. mat. 37:71-73 '64. (MIRA 13:4)

1. Gidrokhimicheskiy institut Glavnogo upravleniya gidrometeoro-
logicheskoy sluzhby pri Sovete Ministrov SSSR, Novocherkassk.

DATSKO, V.G. [deceased]; VASIL'YEVA, V.L.

Changes in the content of organic and biogenic substances along
the length of the Tsimlyansk Reservoir and the Don River below
the dam. Gidrokhim. mat. 38:25-37 '64.

1. Gidrokhimicheskiy institut AN SSSR, Novocherkassk. (MIRA 18:4)

DATSKO, V.G.; VASIL'YEV, V.L.

Yearly production of phytoplankton in the Tsimlyansk Reservoir.
Gidrokhimmat. 36:75-83 '64.

J. Gidrokhimicheskiy Institut, Novocherkassk. Submitted November
9, 1961.

(MIRA 18:11)

DATSKO, V.G. [deceased]; VASIL'YEVA, V.L.; ROMENSKAYA, N.N.;
IVLEVVA, I.N.; SEMENOV, A.D.

Some data on organic substances in the Tsimlyansk Reservoir
and elements of their balance. Gidrokhim. mat. 37:63-70 1964.
(MIRA 12:4)

1. Gidrokhimicheskiy institut Glavnogo upravleniya gidro-
meteorologicheskoy sluzhby pri Sovete Ministrov SSSR, Nove-
cherkassk.

VASIL'YEVA, V.L.; SHAYKHET, G.Kh.

Incidence of influenza in Kiev and Chernigov Provinces in
1958-1959. Vop. virus. 5 no. 6:749 N.D '60. (MIRA 14:4)
(KIEV PROVINCE—INFLUENZA) (CHERNIGOV PROVINCE—INFLUENZA)

VASIL'YEVA, V. L., Cand Med. Sci., — (diss), "Epidemiology of Grippe in rural areas," Kiev, 1961, 12 pp (Kiev OLRB Medical Institute im Acad. A. A. Bogomolets), 300 copies (KL-Supp 9-61, 189)

Vasil'yeva, V. L., Povelotskiy, M. I.

On the question concerning the possibility of the existence of tick encephalitis on the territory of the Kiev and Chernigov Oblast's (Preliminary report)

Materialy nauchnykh konferentsii, Kiev, 1959. 288pp
(Kievskiy Nauchno-issledovatel'skiy Institut Epidemiologii i Mikrobiologii)

VASIL'YEVA, V.L.

Presence of foci of tick-borne encephalitis in Kiev, Chernigov and
Zhitomir Provinces. Vrach, delo no.3:98-102 Mr '64.
(MIRA 17:4)

1. Kiyevskiy institut epidemiologii i mikrobiologii.

VASIL'YEV, V.M.

Changes in the electroencephalogram and galvanic skin reaction
in the process of formation of a temporary connection between
the motor and visual analyzers in man. Zhur. vys. nerv. deiat.
14 no.5:755-762 34.0 162. (MIRA 17:12)

1. Chair of Physiology of Higher Nervous Activity, Moscow
University.

VASIL'YEVA, V.M.; MEL'NIKOVA, T.S.

Effect of proprioceptive impulsion on the electrical activity of the cerebral cortex in rabbits. Nauch. dokl. vys. shkoly; biol. nauki no.3:72-75 '64 (MIRA 17:8)

1. Rekomendovana kafedroy fiziologii vysshey nervnoy deyatel'nosti Moskovskogo gosudarstvennogo universiteta.

VASIL'YEVA, V. M.

VASIL'YEVA, V. M. -- "Changes of the Electrical Activity of the Brain in Rats in the Presence of Reflex Epileptiform Attacks." Moscow State U imeni M. V. Lomonosov, Biological-Soil Faculty, Moscow, 1955*(Dissertation for the Degree of Candidate in Sciences)

SO: Knizhnaya letopis', No. 37, 3 September 1955

*For the Degree of Candidate in Biological Sciences

VASIL'YEVA, V.M.

Modification of the electrical activity of the cortical segment of the motor analyzor in white rats during a reflex epileptiform seizure [with summary in English] Biul.eksp.biol. i med. 43 no.1:57-61 Ja '57.
(MLRA 10:8)

1. Iz laboratori patofiziologii vysshey nervnoy deyatel'nosti (zav. - doktor biologicheskikh nauk L.V.Krushinsky) kafedry fiziologii vysshey nervnoy deyatel'nosti (zav. - chlen-korrespondent Akademii pedagogicheskikh nauk SSSR prof. L.G.Voronin) biologo-pochvennogo fakul'teta Moskovskogo gosudarstvennogo universiteta imeni M.V.Lomonosova. Predstavlena deystvitel'nym chlenom AMN SSSR P.K.Anokhinym)

(CEREBRAL CORTEX, physiology,
eff. of reflex epileptiform seizures on cortical part of
motor analyzor, electrical funct., determ. with electrodes)
(EPILEPSY, experimental
same)

USSR/Human and Animal Physiology - Nervous System.
Epilepsy.

T-10

Abs Jour : Ref Zhur - Biol., No 7, 1958, 32176
Author : Vasil'yeva, V.M.
Inst : -
Title : Change of the Electric Activity of the Cortical Section of the Motor Analysor in White Rats During a Reflex Epileptic Attack.
Orig Pub : Byul. esperim. biol. i meditsiny, 1957, 43, No 1, 57-61.

Abstract : A bell originally caused in rats a general motor excitability and strengthening of fast oscillations in the motor region of the cortex. At the moment the clonic stage of the attack set in, there were temporarily registered on the EEG a discharge of fast oscillations with a rate not less than 75 os/sec, then rhythmic oscillations changing into α - and then Δ -like rhythms. On the basis of the domination of the latter, the clonic convulsions changed

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USSR/Human and Animal Physiology - Nervous System.
Epilepsy.

T-10

Abs Jour : Rcf Zhur - Biol., No 7. 1958, 32176

to tonic ones, after which the stage of full arc flexion set in . The slow rhythm persisted until normalization of the condition of the rat. In the stage of general motor excitability, there were often observed an increase in the rate of waves instead of 3-4, up to 7-8 os/sec), weak expression of fast oscillations in the beginning of the clonic stage, and delayed appearance of α -like rhythm only in the tonic stage of the attack. The cortical section of the motor analyzor cannot be considered responsible for the development of all stages of a convulsion; clonic and tonic stages are connected, seemingly, with excitability of other sections of the brain.

Card 2/2

VASIL'YEV, V.M., inzh.

Magnetic treatment of condenser cooling water. Energetika 12 no. 3:6-7
A3 '64. (MIRA 17:9)

VASIL'YEVA, V.M.

Variations in the electrogram of the cerebral cortex in white rats
during epileptiform seizures complicated by experimental motor neuroses.
Nauch.dokl.vys.shkoly; biol.nauki no.2:69-72 '60. (MIRA 13:4)

1. Rekomendovana kafedroy fiziologii vysshoy nervnoy deyatel'nosti
Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.
(ELECTROENCEPHALOGRAPHY) (CONVULSIONS)

VASIL'YEVA, V.M.

Change in the electroencephalogram and galvanic skin reaction
during rhythmical proprioceptive stimulation. Nauch.dokl.vys.
shkoly; biol.nauki no.4:74-78 '62. (MIRA 15:10)

1. Rekomendovana kafedroy fiziologii vyshey nervnoy deyatel'nosti
Moskovskogo gosudarstvennogo universiteta im. Lomonosova.
(ELECTROENCEPHALOGRAPHY)

VASIL'YEV, V.M.; POMOLOV, V.P.

Electrographic study of temporary connections in man. Zhur. vys.
nerv. deiat. 15 no.5:760-787 S-P '65.

(MIRA 18:11)

1. Kafedra fiziologii vysokoy nervnoy deyatel'nosti Moskovskogo
gosudarstvennogo universiteta im. M.V. Lomonosova i Institut vysshey
nervnoy deyatel'nosti i neirofiziologii AN SSSR.

EXCERPTA MEDICA Sec 2 Vol 12/5 Physiology May 59

1896. EEG STUDY OF MOTOR CORTICAL REGIONS IN WHITE RATS DURING EPILEPTIFORM REACTIONS (Russian text) - Vasiljeva V. M. Lab. of Pathophysiol. of Higher Nerv. Activity, Moscow Univ. - ZH. VYSSH. NERV. DEYAT. 1958, 8/4 (602-610) Graphs 3 Illus. 1

The recording of bioelectrical potentials of the brain in white rats by means of chronically implanted electrodes during all phases of reflex epileptiform reaction evoked by sound stimulation is possible under conditions of partial fixation of the animal (full immobilization of the head and slight fastening of the body, the extremities remaining free) in the state of increased 'epileptogenic' sensitivity after parathyroidectomy. The data obtained show that drastic changes in the functional state of the cortical area under investigation occur during the development of the epileptiform reaction. These data lead to some suggestions about the nervous mechanism of this reaction.

VASILL'YEVA, V.M.

Electroencephalographic investigations of the cerebrocortical motor region in white rats during epileptiform reactions [with summary in English]. Zhur.vys.nerv. deist. 8 no.4:602-610 Jl-Ag '58 (MIRA 11:9)

1. Laboratoriya patofiziologii vyshey nervnoy deyatel'nosti kafedry vyshey nervnoy deyatel'nosti Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.

(CEREBRAL CORTEX, physiology

eff. of epileptiform reactions in rats on motor

region, registration with implanted electrodes (Rus))

(CONVULSIONS, experimental,

same (Rus))

VASIL'YEVA, V.M. [Vasil'ieva, V.M.]

Development of drugstores in the L'vov region during the past 25
years. Farmatsev. zhur. 19 no.4:88-90 '64. (MIRA 17:11)

1. Apteknoye upravleniye L'vovskogo oblastnovo otdeja zdravookhraneniya.

VASIL'YEV, V.N.

Michurin varieties of apple in Siberia. Biul.Glav.bot.sada
no.19:126-127 '54. (MIRA 8:2)

1. TSentral'nyy Sibir'skiy botanicheskiy sad Zapadno-Sibir-
skogo filiala Akademii nauk SSSR.
(Siberia--Apple--Varieties)

VASIL'YEVA V.N.

Studying apple varieties at the Botanical Garden of the West Siberian
Branch of the Academy of Sciences. Trudy Bot. sada Zap.-Sib. fil. AN
SSSR no.2:71-80 '57. (MIRA 11:10)
(Novosibirsk Province--Apple--Varieties)

VASIL'YEVA, V.N.

Culling starting forms for apple breeding in the forest-steppe
zone of Novosibirsk Province. Trudy Bot. sads Zap.-Sib. fil. AN
SSSR no.2:105-110 '57. (MIRA 11:10)
(Novosibirsk Province--Apple breeding)

VASIL'eva, V. N.

23011 Alkilirovanie benzoda spirtami v prisutstvii ftoristogo bora s fosfornoy kislotoy. Doklady akad. Nauk. SSSR, novaya seriya, T. LXVII, No. 3, 1949, C. 475-78. - Bibliogr: 5 nazv.

SO: LETOPIS' NO. 31, 1949

VASILYeva, V. N.

USSR/Chemistry - Physical chemistry

Card 1/1 Pub. 147 - 10/26

Authors : Guryanova, E. N., and Vasilyeva, V. N.

Title : Exchange of RS groups in polysulfides

Periodical : Zhur. fiz. khim. 28/1, 60-66, Jan 1954

Abstract : It was established, by means of the radioactive S³⁵ isotope, that the exchange of neutral S-atoms between polysulfides - diethyltrisulfide - diethyltetrasulfide; diethyltrisulfide (dithiolytrisulfide) takes place not as result of the S-atom migration from one polysulfide molecule into another but as results of the exchange of the RS groups. The conditions leading to the exchange of RS groups were investigated in various polysulfide systems and it was found that the radical does affect the mobility of the RS groups. The effect of ultraviolet radiation on the exchange of the RS groups between polysulfides, disulfides and thiols, is explained. Five references : 3-USSR and 2-USA (1948-1954).

Institution : The L. Ya. Karpov Physico-Chemical Institute, Moscow

Submitted : March 5, 1953

VASIL'Yeva, V N

62 ✓ Structure of 2-mercaptopbenzothiazole and several of its derivatives. V. N. Vasil'eva and E. N. Gur'yanova (L. Ya. Karpov Phys.-Chem. Inst., Moscow). *Zhur. Fiz. Khim.* 28, 1310-26(1954); cf. Oesper, et al., *C.A.* 36, 30067. — In order to det. the mol. structure of 2-mercaptopbenzothiazole (I), the dipole moments (μ) were found and the infrared (IR) spectra in the range 2000-3500 cm.⁻¹ were observed at 25 and 40° of I, 2-chlorobenzothiazole (II), 2-hydroxybenzothiazole (III), 2,2'-bisbenzothiazolyl sulfide (IV), and 2,2'-bisbenzothiazolyl disulfide (V). Exptl. data are tabulated and plotted. Values of μ at 25° for I-V in benzene soln. were 4.67, 2.28, 8.33, 3.07, and 3.52 D., resp.; for I and II at 40° they were 4.02 and 3.33 D., resp. The 6-nitro (VI), 6-amino (VII), and 6-chloro derivs. of I were too insol. in the usual solvents for detn. of their μ or IR spectra; the spectra of I, VI, and VII in the solid phase (s) are plotted. The structure of I (s) corresponds to the formula $\text{C}_6\text{H}_4\text{NHCS.S}$; in soln. I is a mixt. of the latter with its tautomer $\text{C}_6\text{H}_4\text{N:C(SH)S}$. III behaves

J. W. Lowenberg, Jr.

(1)

VASIL'YEV, V. IV
VASIL'YEV, V. N.

6

✓ 7682

SULPHUR EXCHANGE IN POLYSULPHIDES AND
VULCANIZATION ACCELERATORS. E. M. Chur'yanova,
V. N. Vasil'eva, and L. S. Kuzina. p.270-290 in Meetings of
the Division of Chemical Sciences. Session of the Academy
of Sciences of the U.S.S.R. on the Peaceful Use of Atomic
Energy. July 1-5, 1955. Moscow, Publishing House of the
Academy of Sciences of the U.S.S.R., 1955. 376p. (In
Russian)

The radioactive sulfur isotope S³⁵ was used in the work to
find out the influence the structure of molecules exerts on
the mobility of sulfur atoms in the bonds S—S, C—S,
C=S of organic polysulfides and a number of other com-
pounds, including vulcanization accelerators. (auth)

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APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859010010-6"

VASIL'YEVA, V. N.: "

VASIL'YEVA, V. N.: "Isotope exchange of sulfur between disulfides and mercaptans." Min Chemical Industry USSR. Order of Labor Red Banner Sci Res Physicochemical Inst imeni L. Ya. Karpov. Moscow, 1956. (DISSERTATION For the Degree of Candidate in CHEMICAL SCIENCES.)

So: Knizhnaya letopis', No. 24, 1956

USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 970

Author: Vasil'yeva, V. N., and Guryanova, Ye. N.

Institution: None

Title: Synthesis of Mercaptans and Disulfides Using Tagged Sulfur Isotopes

Original Periodical: Zh. obshch. khimii, 1956, Vol 26, No 3, 677-684

Abstract: The synthesis of the following compounds containing radioactive S³⁵ is described: C₄H₉SH (I), C₆H₅C₂H₅SH (II), p-CH₃C₆H₄SH (III), (p-CH₃C₆H₄S)₂ (IV), p-CH₃OC₆H₄SH (V), (p-CH₃OC₆H₄S)₂ (VI), p-C₆H₅C₆H₄SH (VII), C₂H₅OCSSK (VIII), (C₂H₅S)₂ (IX), (C₄H₉S)₂ (X), (C₆H₅CH₂S)₂ (XI), (p-NO₂C₆H₄S)₂ (XII), (C₆H₅S)₂ (XIII), and (p-C₆H₅C₆H₄S)₂ (XIV). I and II are prepared by reacting n-C₄H₉Br and C₆H₅CH₂Cl with alcoholic NaHS³⁵. The latter reagent is prepared either by passing H₂S³⁵ through alcoholic C₂H₅ONa or by dissolving the tagged sulfur in alcoholic C₂H₅ONa, followed by passing a stream of ordinary H₂S through the solution. The respective halide is

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Sci Res Physico-Chem Inst. im A. V. Karpo

USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 970

Abstract: carefully added to an alcoholic solution of NaHS³⁵ (5 gms of Na in 100 ml alcohol) and the solution heated 2-3 hours over a water bath. The reaction mixture is poured into water, the mercaptan which separates is collected and distilled. All the steps in the preparation of NaHS³⁵ are carried out in an atmosphere of N₂. The yield of I is 80-90%, of II, 75%. III is prepared by the method developed by Tite-Skvortsov and co-workers (Referat Zhur - Khimiya, 1954, 32374); the yield is 20-25%. IV is a side-product of the synthesis of III, and can also be synthesized by the oxidation of III with K₃Fe(CN)₆ in alkaline medium. The yield of IV prepared by the latter method is about 90%. V is prepared from III and p-CH₃OC₆H₄N₂Cl; the intermediate p-methoxyphenylethyl xanthate is cleaved with alcoholic KOH. The yield of V is about 70%, bp 89-90/4-5 mm Hg. The oxidation of V by K₃Fe(CN)₆ yields VI. VIII was prepared as follows: alc. Na₂S³⁵ + CS₂ → Na₂CS³⁵ - H₂S³⁵ + CS³⁵ + NaCl; CS³⁵ + C₂H₅OK → VIII. All reactions are carried out under an atmosphere of N₂. It has been established by special experiments that all 3 S atoms in Na₂CS³⁵ are equivalent. VII is prepared in 70% yield by the reduction of XIV with Zn dust and H₂SO₄. XIV is prepared from p-diphenyldiazonium

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USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 970

Abstract: chloride by the same method as V. The hydrolysis of the intermediate diphenylethyl xanthate yields XIV instead of the corresponding mercaptan. IX is prepared as follows: $\text{Na}_2\text{S} + \text{S}^{35} \xrightarrow{\text{C}_2\text{H}_5\text{OH}} \text{Na}_2\text{S}_2^{35}$; $\text{Na}_2\text{S}_2^{35} + 2\text{C}_2\text{H}_5\text{I} \xrightarrow{\text{C}_2\text{H}_5\text{OH}} \text{C}_2\text{H}_5\text{S}^{35}\text{S}^{35}\text{C}_2\text{H}_5 + 2\text{NaI}$. The yield of IX is about 80%. A similar method can be used in the preparation of X from n-butyl-bromide, XI from benzene in 90% yields, and XII from p-chloronitro-benzene in 40-50% yields. XII occurs in 3 crystalline forms. The authors have separated the form melting at 179°. XIII is prepared by adding an ether solution of $\text{C}_6\text{H}_5\text{MgBr}$ with constant cooling to an ether solution of $\text{S}_2^{35}\text{C}_2$ and decomposing the complex which is formed with aqueous HCl; the yield is 30%, bp 190-195°/10 mm, mp 60.5°. Diphenyl-sulfide is formed as a side-product and can be separated by vacuum distillation. The compounds described were prepared in quantities of the order of a tenth of a gram with activities of 1-5 microcuries.

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5 (4)

AUTHORS:

Vasil'yeva, V. N.; Bazov, V. P.,
Geyderikh, M. A.

SOV/76-33-7-11/40

TITLE:

Spectra and Dipole Moments of the p-Derivatives of Dimethyl Aniline

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 7; pp 1516 - 1520
(USSR)

ABSTRACT:

In continuation of a previous paper (Ref 1) the authors investigated the spectra and dipole moments of a number of para-derivatives of dimethyl aniline with electronegative substituents. If there is an electronegative substituent as X in the molecule $X-C_6H_4-NR_2$ (R = CH_3), there occurs usually an additional shift of electrons from NR_2 toward X, which results in an increase of the dipole moment. The effect of the substituent on the optical properties is closely connected with their effect on the position and intensity of the absorption bands in the ultraviolet spectrum. The following data is given (Table): The position of the intense absorption bands of the compounds C_6H_5X and $R_2N-C_6H_4-X$; absorption curves plotted by

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Spectra and Dipole Moments of the p-Derivatives of
Dimethyl Aniline

SOV/76-33-7-11/4C

means of the photoelectric spectrophotometer SF-4 (Figs 1-3); exaltation of molecular refraction in $R_2N \cdot C_6H_4 \cdot X$ (with respect to that of PhX and $PhNR_2$); molar coefficients of the integral intensity of Raman-spectrum lines; dipole moments of the compounds $R_2N \cdot C_6H_4 \cdot X$. Individual data on the methods of determination was already given (Ref 2). The above data indicates that the influence exercised by the dimethyl amino group upon the properties of the molecules under investigation has the same nature; there occurs an approach and intensification of the absorption band, increase in the exaltation, refraction, and intensity of Raman-spectrum lines, decrease in the frequency of group X , and increase in the dipole moments (from NR_2 to X) to a larger extent than would correspond to an additive scheme. Compounds with groups of the highest degree of electronegativity (NO_2 , NO , CHO) are most strongly influenced by the NR_2 group. However, the authors did not find any specific relation between the individual influences. In conclusion, they thanked

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Spectra and Dipole Moments of the p-Derivatives of SOV/76-33 .7-11/40
Dimethyl Aniline

P. P. Shorygin for his assistance. There are 3 figures, 1 table, and 5 references, 3 of which are Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova. Akademiya nauk
SSSR (Physicochemical Institute imeni L. Ya. Karpov, of the
Academy of Sciences, USSR). Institut organicheskoy khimii
(Institute of Organic Chemistry)

SUBMITTED: December 14, 1957

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VASIL'YEVA, V.N.

Apple in the Kulunda zone of Novosibirsk Province. Trunk 7200 mm.
169-175 '64. (MIRA 17:14)

5(4)

AUTHORS: Vasil'yeva, V. N., Gur'yanova, Ye. N. SOV/76-33-9-14/37

TITLE: Dipole Moments and Structure of Disulphides

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 9, pp 1976-1981
(USSR)

ABSTRACT: By the aid of the dipole moments which were determined for some disulphides (in benzene at 25°), an investigation was made of the position of the RS-group in the disulphides as well as of the influence exerted by composition and structure of the R-radicals on the stability of the space configuration; the purpose was to evaluate the possibility of a free or inhibited rotation of the RS-group around the S-S bond. The dipole moments of the following disulphides were measured: di-n-propyl-(1.98), di-n-butyl-(1.99), di-n-octyl-(1.99), di-n-myristyl-(1.97), di-n-octadecyl-(2.07), dibenzyl-(1.90), diallyl-(1.76), di-p-diphenyl-(2.20), di-p-nitrobenzyl-(4.97), di-p-methoxyphenyl-(3.11), di-2,4,5-trichlorophenyl-(1.15), p-methoxydibenzoyl-(2.50), dibenzoyl-(1.1), and dibenzoyl disulphide (1.1 at 40°C). Results are listed (Table 1), and compared with respective data from publications (Table 2). After considering the possibilities of molecular configuration of the disulphides,

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SOV/76-33-9-14/37

Dipole Moments and Structure of Disulphides

and after comparing the experimental values obtained for the dipole moments with those computed from the vector sum, the disulphides are found to exhibit a non-planar molecular configuration. This statement is in agreement with data of X-ray structural analysis of some compounds containing the S-S group (cf J. Toussaint, Ref 3). The ever constant value of the dipole moments in disulphides with different R-radicals shows that the C-S-S-C is formed in all compounds according to the same law; this may also be the reason explaining the non-planar configuration of polysulphides with several S-atoms. The main factor responsible for the non-planar twisted configuration of the disulphides and other polysulphides seems to be the mutual repulsion of the unsheared electron pairs at the sulphur atom. Hence, the question rises as to the possibility of transferring an interaction between atoms and radical groups in compounds of the type $X-C_6H_4-S-S-C_6H_4J$. There are 2 tables and 14 references, 2 of which are Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova, Moskva
Card 2/3

SOV/76-33-9-14/37

Dipole Moments and Structure of Disulphides

(Physico-chemical Institute imeni L. Ya. Karpov, Moscow)

SUBMITTED: February 22, 1958

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5(2,4)
AUTHORS:

Rodionov, A. N., Vasil'yeva, V. N., Talalayeva, T. V., Shigorin,
D. N., Gur'yanova, Ye. N., Kocheshkov, K. A., Corresponding
Member, AS USSR

SOV/20-125-3-27/63

TITLE:

Intermolecular Lithium Bond, Its Influence Upon the Vibration
Spectra of Molecules and Upon the Dipole Moments
(Mezhmolekulyarnaya litiyevaya svyaz', yeye vliyanije na
kolebatel'nyye spektry molekul i dipolnyye momenty)

PERIODICAL:
(USSR)

Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 3, pp 562-565

ABSTRACT:

In an earlier paper (Ref 1) the authors proved the formation of
a bond referred to in the title $-\delta\text{CH}_2\text{-Li} \cdots \text{CH}_2\text{-Li}^+$ (I) and
R-O-Li...O-Li (II). The lithium bond like the hydrogen bond is
a secondary chemical bond (Ref 2). Type (I) was closely in-
vestigated on the basis of infrared absorption spectra. In the
work under review, infrared spectra of Alk-Li compounds with a
varying length of the radical chain were solved in hexane and
investigated at various concentrations. The aim was to clarify

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SOV/20-125-3-27/53

Intermolecular Lithium Bond, Its Influence Upon the Vibration Spectra of Molecules and Upon the Dipole Moments

the dependence of the intermolecular space, of the stability of the lithium bond and also of the magnitude of the frequency displacement of the groups C-Li on the length and on the structure of the carbon radical. Table 1 as well as figures 1 and 2 illustrate the results obtained. As may be observed therefrom, the value of the displacement of the said groups actually decreases with increasing chain length. Thus also the stability of the lithium bond in the complexes decreases. The investigation of the solutions of ethyl, n-butyl, and n-amyl lithium in hexane showed a linear course of the dependence of the dielectricity constant on the concentration in the case of lower concentrations. This course diverges from the straight line on an increase of concentration (0.4-3.0 mols %). The dipole moment of ethyl lithium in benzene remains constant between 0.08-0.43 mols % and amounts to 0.87 D. The variation of the dipole moment in the complex, connected with the formation of lithium, goes back on the whole to the action of this bond upon the type of orientation of the dipoles with respect to one another. Therefore, the formation of cyclic complexes and especially the type

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SOV/20-125-3-27/63

Intermolecular Lithium Bond, Its Influence Upon the Vibration Spectra of Molecules and Upon the Dipole Moments

of the "quadrupoles" must decrease the dipole moment. This apparently takes place in the ethyl lithium solutions in benzene. It follows from the above that alkyl lithium molecules are associated both in benzene and in hexane solutions. The character of the associate depends both on the nature of the solvent and on the radical composition. The lithium bond considerably influences the frequency variations of the vibrations of the C-Li groups and also the dipole moments of the complexes; these variations here depend on the radical length, on the concentration of the solutions, and also on the nature of the solvent. There are 2 figures, 1 table, and 3 references, 2 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L. Ya. Karpova (Scientific Physico-chemical Research Institute imeni L. Ya. Karpov)

SUBMITTED: December 29, 1958
Card 3/3

87118

24.2500 2209, 1144 only

S/062/60/552, S/03/554, S/2:
B023/B064

AUTHORS: Vasiliyeva, V. N., Talalayeva, T. V., Gur'yanova, Ye. N.,
and Kocheshkov, K. A.

TITLE: Dipole Moments of Organolithium Compounds of the Aliphatic
Series

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh
nauk, 1960, No. 9, pp. 1549-1552

TEXT: On the basis of published data (Refs. 1, 2, 3, 4, 5, 6), the authors measured the dipole moments of ethyl lithium, n-propyl lithium, n-butyl lithium, n-amyl lithium, and n-dodecyl lithium in hexane. Measurements were carried out at concentrations as low as possible, for which an association was unlikely, and concentration values at which association was determined by means of the cryoscopic method. Since all these compounds are extremely unstable, their syntheses, the preparation of the solutions and the measurements of the dipole moments were carried out in pure argon atmosphere. The authors describe the preparation of the solutions and the determination of their concentration by means of titration. The dipole

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S/062/60/000/009/004/021
B023/B064Dipole Moments of Organolithium Compounds of
the Aliphatic Series

moments were measured at 25°C with the help of the pulsation method. The concentration of the solutions was 0.094-0.66 mole%. Tables 1 and 2 show the results. Table 3 shows the results of the measurements made at 0.6-7.5 mole%. The dipole moment μ was determined by the formula $\mu = 0.0127 \cdot 10^{-18} \sqrt{(P_{\infty} - P_E)T}$ (P_E = electron polarization of the substance)

It was 1.1 D for ethyl lithium concentrations of 0.12-0.62 mole%, for butyl lithium concentrations of 0.13-0.36 mole%, and for amyl lithium concentrations of 0.13-0.66 mole%. From the linear dependence of the dielectric constant of the solution on concentration (Table 1), and the constancy of the dipole moment value of all three compounds, it is concluded that in this range of concentration monomeric molecules are concerned, and that the value of the dipole moment for the compounds mentioned refers to the moment of the monomer. A deviation from the linear dependence is found when measuring the dielectric constant of alkyl lithium solutions in hexane at higher temperatures. The greatest deviation is observed in the range of concentration of from 0.62 to 3.27 mole%. This deviation and the reduction of the dipole moments is, in the authors' opinion, caused by the association of the molecules and the formation of

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Dipole Moments of Organolithium Compounds of
the Aliphatic Series

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complexes. This is in agreement with the published data (Refs. 3,4, and 5). If the chain of the aliphatic radical is extended from ethyl to amyl, the degree of association of the alkyl lithium compounds decreases. This dependence will be subject of further investigations. The behavior of the alkyl lithium compounds in benzene solutions differs from the behavior of these compounds in hexane. The authors measured the dipole moment of ethyl lithium in benzene at 25°C and obtained 0.87 D in the concentration range of from 0.094-0.49 mole%. Apparently, lithium forms stable complexes in benzene solutions also in the case of comparatively low concentrations. There are 3 tables and 6 references: 3 Soviet, 2 US, and 1 German.

X

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: March 7, 1959

Legend to Tables 1 and 3: c - concentration of the dissolved substance in mole%; ϵ - dielectric constant of the solution; d - density of the solution.
1) determination in hexane at 25°C, 2) ethyl lithium, 3) n-amyl lithium,

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VASIL'YEVA, V.N.; PEREKALIN, V.V.; VASIL'YEV, V.G.

Study of the structure of unsaturated nitro compounds by the
method of dipole moments. Zhur.ob.khim. 31 no.7:2171-2175 Jl
'61. (MIRA 14:7)

1. Leningradskiy gosudarstvennyy pedagogicheskiy institut imeni
A.I. Gertseva i Fiziko-khimicheskiy institut imeni L.Ya. Karpova.
(Nitro compounds)

VASIL'YEVA, V.N.; PEREKALIN, V.V.; VASIL'YEV, V.G.

Dipole moment study of the effect of steric factors on conjugation
in the molecules of unsaturated nitro compounds. Zhur. ob. khim.
31 no. 7:2175-2178 Jl '61. (MIRA 14:7)

1. Leningradskiy gosudarstvennyy pedagogicheskiy institut imeni
A.I. Gertseva i Fiziko-khimicheskiy institut imeni L.Ya. Karpova.
(Nitro compounds—Dipole moments)

VASIL'YEVA, V.N.; PEREKALIN, V.V.; VASIL'YEV, V.G.

Method of dipole moments used for studying the structure of unsaturated nitro compounds. Dokl. AN SSSR 141 no.3:620-623 N '61.
(MIRA 14:11)

1. Predstavleno akademikom A.N. Frumkinym.
(Nitro compounds--Dipole moments)

35731

S/020/62/143/002/015/022

B145/B138

117211

AUTHORS: Kvitsko, S. M., Perekalin, V. V., Vasil'yeva, V. N.,
Bobovich, Ya. S., and Slovokhotova, N. A.

TITLE: Synthesis and structure of nitrobutadiene derivatives

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 2, 1962, 345 - 347

TEXT: Some nitrobutadiene and nitraminobutadiene derivatives were synthesized, and their structure was examined, in order to establish the effect of the chemical structure of nitralkenes and nitralkenedienes upon their polymerizability. The reaction scheme indicates the synthesis course as well as the products obtained. This is the first case of a C-chain condensation with malonic acid aldehyde. A ketimino - en amino tautomerism can be dismissed for products of the Knoevenagel condensation. It was not possible to alkylate nor to acylate the amino and nitraminobutadienes. The spatial structure of compounds II to X (see diagram) was examined by Raman spectra and by measuring the dipole moments. III and IV (compound IV is not indicated in the diagram; its structure is the same as that of

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B145/B138

Synthesis and structure ...

VII - IX, except that there is $=\text{NC}_6\text{H}_5$ instead of $=\text{CRR}'$) exhibit intramolecular H bonds; the nitro group is in cis-position with respect to the amino group. Compounds V - VIII do not possess a plane structure. The nitro group (at the C-N bond) as well as the vinylidene residue (at the C-C bond of the butadiene grouping) are deflected here. The H bonds are also weakened thereby, which results in a displacement of the fully symmetric vibration band of the nitro group toward shorter wavelengths ($\nu = 1350$). IX exhibits a high dipole moment (7.5 D), which is explained by assuming a structure in which the dipole moments of the two nitrile groups add. A characteristic of the Raman spectra of nitraminobutadienes was found to be the splitting of the fully symmetric vibration of the nitro group, which may be caused by the intramolecular H bonds or the Fermi resonance. When examining the concentration dependence no redistribution of intensities was observed. Hence, the splitting cannot be caused by intermolecular H bonds. The intensity of the nitro-group bands is considerably higher in aromatic derivatives (IV : 140) than in aliphatic ones (VI : 12). This circumstance indicates the inclusion of an aromatic ring in the conjugation through the amino group. The low intensity of double bond

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B145/B138

Synthesis and structure ...

vibration is explained by the weakening effect of the H ring upon the double bond. The vibrational intensities in double bond and antisymmetric $-C_6H_5$ are relatively high for IX and X (IX: 90 and 80, X: 20 and 75 \pm 45, respectively). Evidently, a conjugation in IX, that involves all π -electrons, is of greater advantage from the energy viewpoint than would be a conjugation, wherein only the H ring participates. In X, by contrast, the possibility that an H ring may form is lacking altogether. There are 1 table and 5 references: 4 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: D. Hathaway, M. Flett, Trans. Farad. Soc., 45, 818 (1949).

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova
(Physicochemical Institute imeni L. Ya. Karpov)

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X

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Equilibria in aqueous solutions of calcium, strontium, and barium nitrates. Izv.vys.ucheb.zav.;khim. i khim.tekh. 6 no.2:339-341 ('63. (MIRA 16:9)

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AUTHORS: Vasil'yev, V. P., Vasil'yeva, V. N. SOV/153-2-4-1c/32

TITLE: On the Variation of Entropy in the Dissolution of Salts

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 4, pp 522 - 527 (USSR)

ABSTRACT: The possibility of determining certain dependences in the entropy variation in the dissolution of salts is very tempting. Thus it would be possible to determine the entropy variation even of empirical or semi-empirical dependences if no experimental value is known. The entropy variation upon transition of a solid salt into aqueous solution under general standard conditions is understood by the variation (dissolution entropy) mentioned in the title. If the well-known thermodynamic interrelation is applied to this process, the equation $nRT\ln^a = \Delta H - T\Delta S$ (1) is obtained which connects the ionic activity in a saturated salt solution (a), the solution heat (ΔH) and -entropy (ΔS). The dissolution entropy can be computed by means of equation (1) using data from reference works regarding solubility and dissolution heats. At present, the entropies of many solid salts, and salts in solution, are more or less

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well-known (Refs 1-3). This opens a new way of computing the dissolution entropy. If the salt in aqueous solution is practically entirely dissociated, its entropy in this solution can be equated to the sum of entropies of the constituent ions, i.e. $S_{aq} = nS_M + pS_X$ (3), S_M and S_X being the entropies of the salt cation and salt anion, respectively, and n and p the stoichiometric coefficients in the formula for the salt. It was interesting to determine the dependence of the dissolution entropy on any thoroughly investigated function. This dependence was supposed to include salts of various types, i.e. it should be usable for ions of varying charge. From this point of view, the hydration heat of the ion was very interesting since the dissolution process of the salt is extensively related to the hydration effect of the ions upon transition from crystal into solution. The paper under discussion aims at explaining the relation between dissolution entropy and hydration heat of the cation for a greater number of salts. In this case, only salts formed by the cations of the most important subgroups of the I and II groups of the periodic system are concerned. A quantitative expression of the dependence in question can be determined from

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the diagram: hydration heat - entropy variation. Figure 1 shows the values discussed of the salts of alkali metals with monovalent anions. The entropy variation was computed according to equation (2) considering equation (3). As can be seen from figure 1, the entropy variation depends linearly on the hydration heat of the cation. Table 1 shows that the constant of the equation: $\Delta S = 0.30\Delta H_{hydr} + \text{const}$ (5) remains satisfactorily

stable. Thus it can be maintained that equation (5) expresses the relation of the dissolution entropy of salts of type (:-1) with the hydration heat of the cation in a rather satisfactory way. Figure 2 shows the relationship between the entropy variation in the dissolution of salts of alkali metals of type M_2X and the hydration heat of the cation. Here, too, a distinct linear dependence can be seen. Thus, the entropy variation mentioned will be expressed by the equation $\Delta S = 0.60\Delta H_{hydr} + \text{const}$ (6). Table 2 shows the above constant for salts of alkali metals with 2-charge ions. The constant remains practically stable (with the exception of rubidium carbonate). Figure 3 shows the diagram: entropy variation - hydration heat of the cation for the salt sequence: magnesium, calcium, strontium, and barium.

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